High Barn Farm, Effingham

Bat Report - DRAFT

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Contents

LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing. Whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date. This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated, only dominant species may be recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

1.1 The Ecology Partnership was commissioned by Stuart Riley to undertake a preliminary roost assessment and further bat emergence/re-entry surveys of the buildings at High Barn Farm, Effingham, Surrey, KT24 5PP.

1.2 The site consists of a residential dwelling and three outbuildings with associated amenity planting and hardstanding (TQ 1225 5201). The surrounding area includes sparse residential dwellings, woodland and grassland fields (Figure 1).

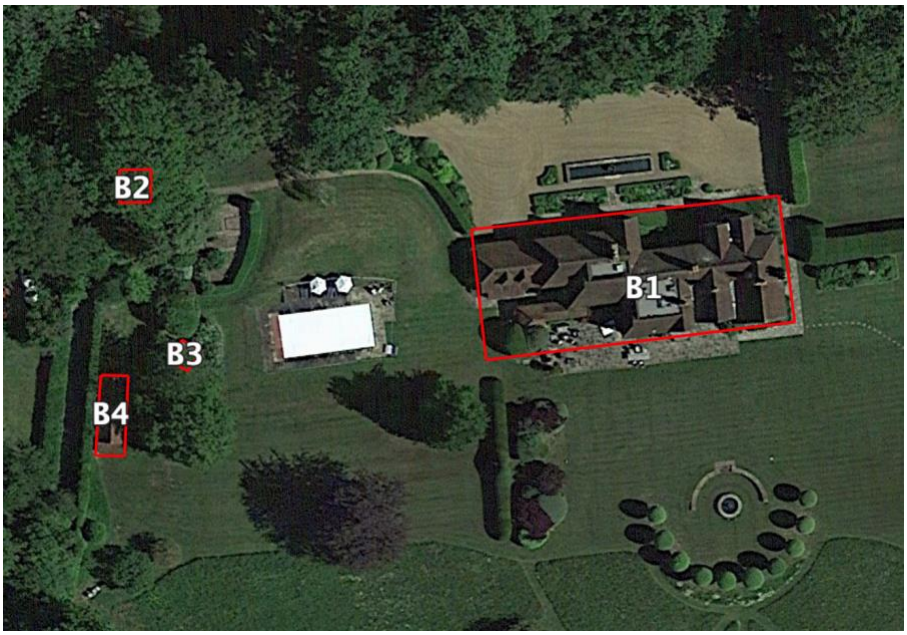


Figure 1: Site and building numbers.

Description of Proposed Development

1.3 Current proposals involve the demolishing three outbuildings and building an extension to the south of the kitchen which will remove the existing pool changing rooms.

Legislation

1.4 All UK bat species and their roosts are protected by law within The Wildlife and Countryside Act 1981 and the Habitats Directive Annex IV. This means it is a criminal offence to:

- Deliberately capture, injure or kill a bat;

- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time;
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat;
- Intentionally or recklessly obstruct access to a bat roost.

2.0 Methodology

Desktop Study

2.1 A desktop study was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites, current and past European Protected Species (EPS) mitigation licences for bat species within 1km and priority habitats within the surrounding area.

Preliminary Roost Assessment

2.2 The main residential dwelling was internally and externally assessed for its suitability for roosting bats. The survey was undertaken on 8th April 2022 by Ecologists Eddie Selwyn BSc (Hons) MSc QCIEEM and Charlotte Chandler BSc (Hons) MSc QCIEEM. The surveyors checked for evidence of roosting bat species and Potential Roosting Features (PRFs).

2.3 The surveyors assessed the building visually and searched for evidence such as:

- Staining beneath or around a hole caused by natural oils in bat fur.
- Bat droppings beneath a hole, roost or resting area.
- Bat droppings and/or insect remains beneath a feeding area.
- Audible squeaking from within a hole.
- Insects (especially flies) around a hole.
- Dead bats.

Dusk and Dawn Surveys

2.4 The preliminary roost assessment recorded bat droppings, a dead brown-longed bat *Plecotus auratus* and multiple potential roosting features in building B1. B1 is a confirmed roost and therefore was subject to further surveys. B4 was deemed to have low suitability for roosting bats and was subject to a single dusk survey.

2.5 A dusk emergence survey was carried out on 12th July 2022 and two dawn re-entry surveys on 6th May, 13th May and 17th June 2022. The dusk survey started 15 minutes before sunset and was completed 1 and a half hours after sunset. The dawn surveys started 1.5 hours before sunrise and were completed 15 minutes after sunrise. The surveys followed Bat Conservation Trust guidelines (Collins 2016). Surveyors were positioned in order to cover areas of interest and record any flyovers and activity around the building (Figure 2). Infra-Red (IR) cameras with IR lamps were also utilised during the surveys to help cover additional aspects of the building. All surveyors were equipped with a Batlogger M or an Echo Meter Touch 2 Pro. Surveyors included Eddie Selwyn BSc (Hons) MSc QCIEEM, Alice Baily BSc (Hons) QCIEEM, Charlotte Chandler BSc (Hons) MSc, Greg Holland, Anthony Owers, Anna Watkins BSc (Hons) and Digby Hayden BSc (Hons).

6th May 2022 – Surveyor Positions

Figure 3: Surveyor positions (orange stars) and IR camera positions (yellow stars)

13th May 2022 – Surveyor Positions

Figure 4: Surveyor positions (orange stars) and IR camera positions (yellow stars)

17th June 2022 – Surveyor Positions

Figure 5: Surveyor positions (orange stars) and IR camera positions (yellow stars)

12th July 2022 – Surveyor Positions

Figure 6: Surveyor positions (orange stars) and IR camera positions (yellow stars)

Limitations

2.6 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment.

3.0 Results

Desktop Study

3.1 The site is surrounded by open pasture and there is some low-density residential dwelling in the wider landscape. There is woodland to the north and south and also a larger unit of woodland further southeast, which is part of Ranmore Common.

3.2 There is one statutory area within 2km of the site. This is Ranmore Common SSSI, approximately 1.3km southeast and designated for its large and continuous block of woodland.

3.3 The site is also surrounded by a number of priority habitats the closest of each type to the main residential dwelling includes:

- Deciduous woodland *c.* 20m north;
- Ancient replanted woodland *c.* 24m north;
- Ancient and semi-natural woodland *c.* 77m south;
- Woodpasture and parkland *c.* 590m southwest;
- Lowland calcareous grassland *c.* 720m southeast; and
- Traditional orchards *c.* 975m east.

3.4 The search also revealed three EPS licences for bats within a 2km of the site:

- A bat licence (2018-2023) for the destruction of a resting place for common pipistrelle *Pipistrellus pipistrellus* and brown long-eared approximately 365m southwest.
- A bat licence (2014-2017) for the destruction of a resting place for brown long-eared bats approximately 900m northeast.
- A bat licence (2013-2014) for the destruction of a resting place for common pipistrelle approximately 1.3km south of the site.

Preliminary Roost Assessment

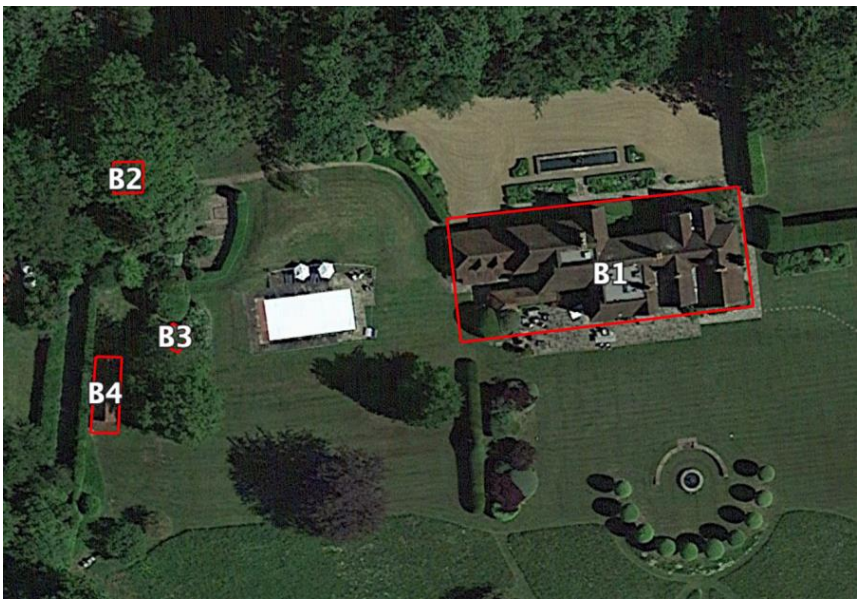


Figure 7: Buildings assessed for bat roosting potential.

3.5 The main residential dwelling (B1) was two-storeys with parts of the roof void converted. The building was constructed of brick with clay roof tiles. Numerous roof and ridge tiles across all elevations were lifted or slipped, providing PRFs for crevice-dwelling bats. Externally, hanging tiles were present around all faces of the building on the upper storey, except for the garage and pool changing rooms which were single storey. The soffit boarding was in good condition and no holes or gaps were observed. Internally, the loft void of B1 was separated into several sections. These have been labelled in Figure 3 below for ease of reference.

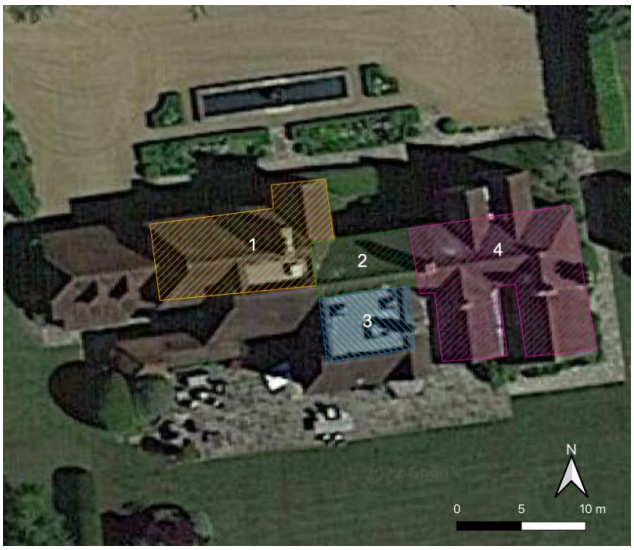


Figure 8: Loft voids in B1, labelled from 1-4 for reference.

3.6 Void 1 was partially boarded throughout and was well insulated with wooden slats covering the roof. This void contained a large water tank and towards the eastern end of this void, a skylight was also present. A few scattered bat droppings were found throughout the void, however no bats were observed. There was also evidence of mice within this void including droppings and carcasses.

3.7 Void 2 had been converted into a storage room with wooden boarding covering the entire space. No evidence of bats was recorded.

3.8 Void 3 was accessible through void 2 and supported insulation on the floor but it was not boarded. The walls were covered in wooden panelling along the southern aspect of the void and felt lining was visible along the western face of the void. No evidence of bats was recorded.

3.9 Void 4 was the largest and was partially boarded on the floor with insulation present throughout. The void was constructed of wooden beams with a felt lining. Within the void, hundreds of bat droppings were scattered throughout, with them being slightly more concentrated along the apexes of the voids leading south. A dead brown long-eared bat was also observed within the central section of the void.

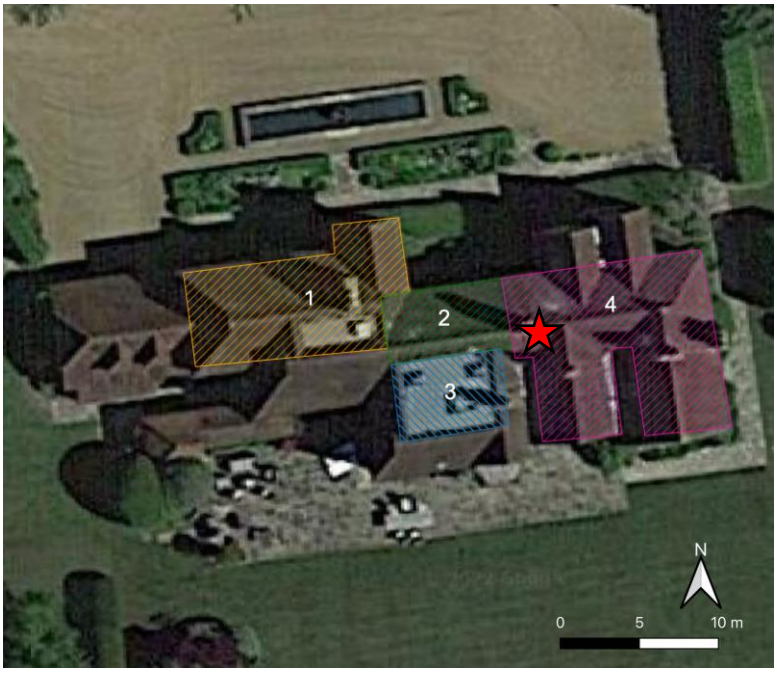


Figure 8: Location of dead brown long-eared bat – red star.

3.10 The droppings from voids 1 and 4 were sent to SureScreen Scientifics for DNA analysis. The analysis determined the droppings to be both brown long-eared bats.

3.11 B2 is a two-car garage in the northwest corner of the site. The building was constructed of concrete bricks with clay tiles on top of corrugated sheeting. Windows were present along the northern and southern sides. No evidence of bats was recorded, and it was deemed to have 'negligible' suitability for roosting bats.

3.12 B3 is a small shed constructed of concrete blocks with a felt lined roof. The building had negligible suitability for roosting bats due to the lack of suitable cracks or crevices and the lightness inside the building due to the large window on the door. There was however a small birds nest present on top of the light within the building and when this building is removed, this should be done outside of the breeding bird season (March-September inclusive) or immediately after a nesting bird check by a suitably qualified ecologist. If active nests are identified, works in the vicinity of the nest must cease until the birds have fledged the nest.

3.13 B4 is a storage building constructed of concrete bricks, with rendering externally, and a tiled roof on wooden timber supports. Internally there was no insulation, boarding or lining and a skylight and wooden vent were present making the space very light inside. No evidence of bats was recorded. Externally, the tiles on the main part of this building were relatively well sealed with only the occasional lifted, slipped or broken tile. Externally, there were frequent lifts and missing tiles which may provide PRFs for crevice-dwelling species. Therefore, B4 was considered to have 'low' suitability for roosting bats.

Dusk and Dawn Surveys

6th May 2022 – Dawn Re-entry

Figure 9: Bat re-entry locations 1-3.

Figure 10: Bat re-entry location 4.

3.14 Sunrise was at 05:25 and the weather was clear with 0% cloud cover and a temperature of 9°C. Bat activity around the building was considered to be low with numerous passes by common pipistrelles and the occasional brown long-eared. Multiple bats were recorded re-entering the building (roosting in the building). Each roost location has been numbered and is detailed below:

1. Common pipistrelle re-entry under hanging tile at 05:08.
2. Common pipistrelle re-entry under hanging tile at 05:06
3. Common pipistrelle re-entry under hanging tile at 05:01
4. Common pipistrelle re-entry under hanging tile at 05:10

3.15 After the survey, loft void 4 within B1 was checked for roosting bats. 5 brown-long eared bats were recorded in the loft void.

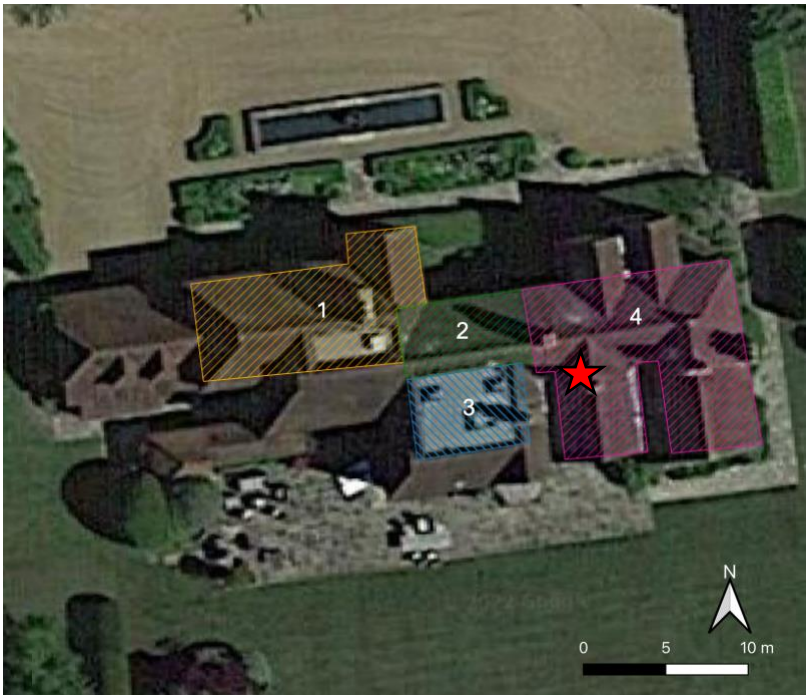


Figure 11: Location of brown long-eared bats roosting in the void 4 – red star.

13th May 2022 – Dawn Re-entry

Figure 11: Bat re-entry location 5.

3.16 Sunrise was at 05:14 and the weather was clear with 0% cloud cover and a temperature of 9°C. A single bat was recorded re-entering the building and has been numbered and is detailed below:

5. *Myotis* sp. re-entry in the corner of the window at 04:29.

3.17 Analysis of the *Myotis* sp. call recorded during the re-entry indicated the bat is either a Whiskered bat *Myotis mystacinus* or Brant's bat *Myotis brandtii*.

3.18 After the survey, loft void 4 within B1 was checked for roosting bats. No bats were recorded in the loft void.

17th June 2022 – Dawn Re-entry

Figure 12: Bat re-entry location 6.

Figure 13: Bat re-entry location 7.

Figure 14: Bat re-entry location 8.

Figure 15: Bat re-entry location 9.

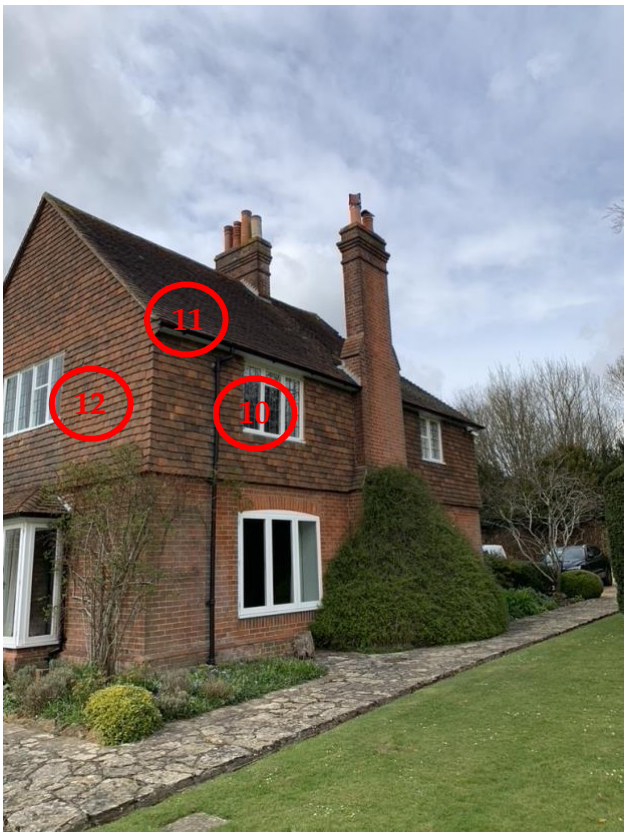


Figure 16: Bat re-entry locations 10-12.

Figure 17: Bat re-entry location 13.

3.19 Sunrise was at 05:25 and the weather was clear with 0% cloud cover and a temperature of 9°C. Bat activity around the building was considered to be low with numerous passes by common pipistrelles and the occasional brown long-eared. Multiple bats were recorded re-entering the building (roosting in the building). Each roost location has been numbered and is detailed below:

6. Common pipistrelle re-entry under hanging tile at 04:24.
7. Common pipistrelle re-entry under hanging tile at 04:19
8. Common pipistrelle re-entry under hanging tile at 04:23
9. *Myotis* sp. re-entry under hanging tile at 03:59 and Common pipistrelle re-entry under hanging tile at 04:20
10. *Myotis* sp. re-entry under hanging tile at 03:48
11. Common pipistrelle re-entry under soffit at 04:11
12. Common pipistrelle re-entry under hanging tile at 04:15
13. Common pipistrelle re-entry under hanging tile at 04:12

3.20 Analysis of the *Myotis* sp. calls recorded during the re-entry indicates the bats are Whiskered bats.

12th July 2022 – Dusk Emergence

Figure 18: Bat emergence location 14.

Figure 19: Bat emergence location 14.

3.21 Sunset was at 21:15 and the weather was clear with 100% cloud cover and a temperature of 23°C. Multiple bats were recorded re-entering the building (roosting in the building). Each roost location has been numbered and is detailed below:

14. Brown-long eared bat emergence behind the chimney at 22:25.
15. Five common pipistrelle bats emerged from hanging tiles between 21:20 and 21:26.

4.0 Discussion

4.1 Surveys recorded brown long-eared bats in loft void 4 in building B1 and multiple common pipistrelle and *Myotis* sp. roosting under hanging tiles.

Table 1: Summary of bat roosts within building B1

Species	Roost type	Location
Brown long-eared	Day roost for individuals / potential maternity roost	B1 - loft void 4.
Common pipistrelle	Day roost for 6-8 individuals	Under hanging tiles, soffit board and windows.
Myotis sp.	Day roost for 4-7 individuals	Under roof tiles and hanging tiles.

4.2 Buildings B2 and B3 were considered to have negligible suitability for roosting bats.

4.3 Building B4 was subject to a single dawn survey and no bats were recorded roosting within the building. As such, with no evidence of bats within the building is it not considered that bats utilise the building for roosting.

Implications for Development

4.4 The proposed development will only impact a single common pipistrelle roost (number 6 – Figure 12).

4.5 The proposed works will impact sections of the hanging tiles on building B1 that support a common pipistrelle roost. A mitigation strategy and a licence from Natural England will therefore be required prior to any works commencing.

4.6 Building B1 voids will not be impacted by the proposed development. Therefore, the brown long-eared bat roosting will not be impacted by the proposed development.

4.7 The identified Myotis roosts will not be impacted by the proposed development.

4.8 The licence can only be applied for once planning permission has been granted. The licence will be based on survey findings, best practice guidance and the experience of ecologists at The Ecology Partnership.

4.9 The following recommendations outline the considerations to be made for roosting bats.

- Removal of roof tiles will disturb roosting bats and lead to the loss of a roost;
- Changes to the roof in terms of new tiles, soffit boarding etc. will lead to the loss of any roosts under gaps in the tiles and will prevent access into the interior of the building through missing tiles or gaps under the eaves;
- The addition of sarking felt or similar materials on the underside of new tiles and the apex may significantly alter the potential for bats to roost under these features;
- Alterations which would drastically alter the thermal properties of the building may lead to the loss of roosts; and
- Changes in lighting inside and outside of the building could lead to the loss of a roost.

4.10 Since the house contains roosts for three bat species, it is important to maintain, where possible, opportunities for roosting bats. This is a requirement in order to comply with the relevant legislation: Wildlife & Countryside Act 1981 (as amended) and Habitats Directive Annex IV.

Maintaining Roost Opportunities

4.11 To mitigate for the loss of any roosts, suitable replacement roosts will be required.

4.12 The majority of the roosting pipistrelle bats utilise the hanging tile and therefore specific hanging tiles should be utilised to create new roosting opportunities around the house. Only bituminous roofing felt should be utilised behind new sections of hanging tiles and specific hanging tiles for bats. This can be achieved either through the use of bat access tiles (see Figure 20 below), or through raising clay tiles on battens, creating spaces beneath which crevice-dwelling bats species can exploit. A total of 5 of these will be inserted into the southern and eastern aspects of the building.

Figure 20: Raised bat tile

4.13 Bat boxes could also be installed on nearby mature trees but these should be used in addition to measures aimed at providing roosts within the house. A range of boxes can be used which are designed for different bat species, for example,

- Vivara Pro WoodStone Bat Box – A general purpose bat box that supports a range of species (Figure 19). These can be hung on trees in a variety of heights and aspects in order to provide a variety of micro-climates.
- Large Multi Chamber WoodStone Bat Box – This is a multipurpose box designed for larger colonies and a range of bat species including pipistrelles, noctules and brown long-eared bats. These should be hung on mature trees around the site (Figure 19).

Figure 21: Vivara Pro WoodStone Bat Box (left) and Large Multi Chamber WoodStone Bat Box (right)

4.14 Boxes should ideally be exposed to the sun for most of the day, so southern and western aspects are preferable and should be hung as high as possible (around 5m above ground).

Timings

4.15 The timing of works must take into consideration the nature of the roosts present. The impacted roost is not considered a hibernation roost and in general, winter is the most suitable time of year to undertake work. Conducting work during the winter will avoid impacting any bats in general. There is a low possibility that hibernating bats under tiles on the north elevation, although to avoid torpid bats being present, works should avoid periods where the temperatures have dropped below 5°C over four consecutive nights.

4.16 Prior to works commencing, bat boxes should be erected on the available mature trees in the immediate area. This means that if any bats are found during works then they can be gently captured and moved by hand to another appropriate roosting place. Bat boxes provide alternative roosting opportunities throughout the redevelopment of the site so that bats always have a roosting place available to them.

4.17 The project will be monitored by a suitably qualified ecologist throughout the whole of the development and will be managed to assess whether the presence of an ecologist is required during some stages of the works.

Outline Mitigation Strategy

4.18 An outline mitigation strategy for bats on site is summarised below.

- The scheme will be designed with bats in mind and should retain and provide roosting opportunities, where possible, and a sensitive lighting scheme.
- Prior to any works on site, alternative roosting spaces will be provided in the immediate area through the use of bat boxes.
- Before works commence, all contractors on site will be given a tool box talk detailing the sensitive method of works to be followed under the supervision of the ecologist on site.
- The sensitive removal of tiles will be carried out at a suitable time of the year (winter) once a full inspection of the building has been completed by a suitably qualified ecologist.
- Works will only take place if temperatures have not fallen below 5°C for the preceding four nights (where practicable) to avoid encountering bats in torpor.
- Any bats found during the soft strip process will be gently captured and immediately placed inside a nearby bat box.
- The project will be closely monitored throughout the redevelopment process by a suitably qualified ecologist and will be managed to assess whether the presence of an ecologist is required during some stages of the work.
- New roosting opportunities will be created within the house throughout the redevelopment process and checked by the ecologist to ensure they are fit for purpose.

5.0 Conclusions

5.1 Surveys have revealed that three bat species use the house (B1) for roosting on an occasional or regular basis. These are brown long-eared bat, common pipistrelle and

Myotis sp. There are numerous internal and external features that provide roosting opportunities including lifted tiles and the loft void.

5.2 The proposed works will impact roosting bats and a licence from Natural England will be required to undertake works on the house and this can only be applied for once planning permission has been granted. An outline mitigation strategy has been included within this report and the proposed development can ensure that opportunities for roosting bats are retained and enhanced post-development.

6.0 References

Collins, J. (ed.)., (2016)., *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). Bat Conservation Trust, London.

Institution of Lighting Professionals., (ILP - 2018)., *Guidance Note 08/18 – Bats and artificial lighting in the UK.* ILP, Rugby.

Lintott, P., & Mathews, F. (2018). *Reviewing the evidence on mitigation strategies for bats in buildings informing best-practice for policy makers and practitioners.*

Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines.* English Nature, Peterborough.

Wightman, I., (2021). *Design, access and heritage statement for The Malt House.* Ian Wightman Historic Building Consultants, Petersfield.

Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

Appendix 1: Photos

Photo 1: Front of building B1.		
Photo 2: Back of building B1		

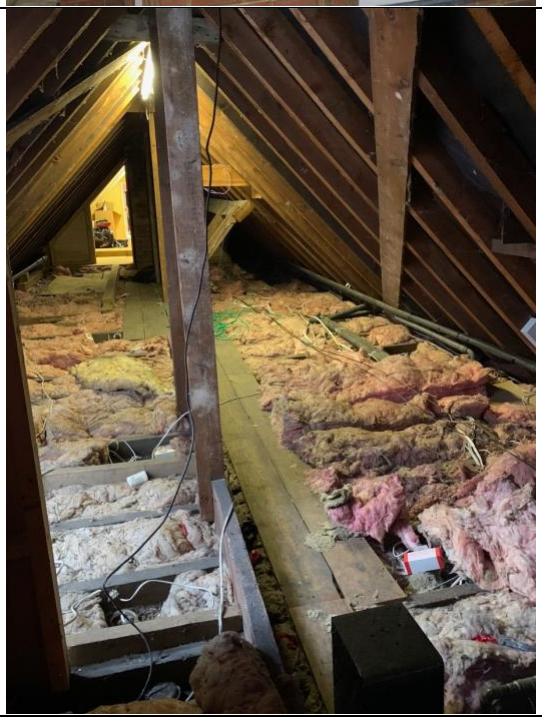
Photo 3: Lifted tiles on pool house roof.		
Photo 4: Inside void 4.		

Photo 5: Hundreds of scattered bat droppings in void 4.			
Photo 6: Dead brown long-eared bat in void 4.			

Photo 7: Inside void 1.	
Photo 8: Building 2.	

Photo 9: Inside building 2.			
Photo 10: Building B4.			

Photo 11: Inside building B4.			
Photo 12: Building B3.			

Photo 13: Birds nest inside building B3.		

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Date: 12/08/2022